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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/549,279

10/19/2005

Tomohiko Takeda

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05/14/2007

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EXAMINER

CHEN, KEATH T

ART UNIT

PAPER NUMBER

1709

MAIL DATE

DELIVERY MODE

05/14/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/549,279

Applicant(s)

TAKEDA ET AL.

Examiner

Keath T. Chen

Art Unit

1709

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 01/05/2006, 10/19/2005.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Tomioka (US 5810963, hereafter, '963).

'963 teaches all the limitation of claim 1:

A substrate processing apparatus (Fig. 1, #1, see also '963, claim 1), which has a high frequency power supply part (#5) with a controllable high frequency power source (#10 controller controls #9 matching unit and #15 gate), applies a high frequency power from the high frequency power source to a discharge electrode (#3) provided in a processing chamber (#1) through a matching unit (#9), and generates a plasma in the processing chamber (col. 6, lines 26-28), comprising:

at least a detector (#11) provided between the high frequency power source (#5) and the matching unit (#9) (the reflected wave from electrode #3 pass through matching unit #9, dircoup #8, path #8b, to detector #11, #13,-16, arrives at #6. Therefore, #11 detector is between matching unit #6 and RF power source #5), or between the matching unit and the discharge electrode, for detecting a reflected wave of the high frequency power reflected from the discharge electrode (col. 3, lines 42-44); and

a controller (#10) controlling the high frequency power source (through switch #6) so as to temporarily stop (col. 7, lines 48-52) or temporarily decrease (col. 11, lines 8-11, also see '963, claim 3) an application of the high frequency power to the discharge electrode, in accordance with a detection result of the detector (col. 7, lines 39-52 and col. 7, lines 26-34),

wherein the controller (#10) functions to control the high frequency power source (through gate #15 and switch #6) so as to temporarily stop or temporarily decrease the application of the high frequency power to the discharge electrode, and when the high frequency power is applied again, continuously apply the high frequency power without temporarily stopping (col. 7, line 60 to col. 8 line 3) or temporarily decreasing (col. 11, lines 8-11) the application of the high frequency power before a predetermined time period passes (col. 8, lines 17-19, see also '963 claim 6), and after the predetermined time period passes, temporarily stop or temporarily decrease the application of the high frequency power to the discharge electrode in accordance with the detection result of the detector (col. 8, lines 4-16).

'963 teaches all the limitation of claim 2:

A substrate processing method (see '963, claim 13) for processing a substrate by inserting a substrate in a processing chamber, exhausting an atmosphere out of the processing chamber while introducing the gas thereinto (col. 5, lines 63-67), applying the high frequency power to the discharge electrode from the high frequency power source through a matching unit (col. 5, last line to col. 6, line 6), and thereby generating

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a plasma in the processing chamber (col. 6, lines 7-10), wherein an application of the high frequency power is controlled to make it possible to:

temporarily stop (col. 7, line 60 to col. 8, line 3, see also '963, claim 17) or temporarily decrease (col. 11, lines 8-11, also see '963, claim 15) the application of a high frequency power to a discharge electrode when a reflected wave of the high frequency power from the discharge electrode is detected (col. 3, lines 42-44 and col. 7, lines 26-34); thereafter when the high frequency power is applied again,

continuously apply the high frequency power without temporarily stopping or temporarily decreasing the application of the high frequency power before a predetermined time period passes (see '963, claim 18); and after a predetermined time period passes,

temporarily stop or temporarily decrease the application of the high frequency power to the discharge electrode when the reflected wave is detected (col. 8, lines 4-16).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keath T. Chen whose telephone number is 571-270-1870. The examiner can normally be reached on M-F, 8:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

kc


JENNA BEFUMO
PRIMARY EXAMINER